the subject of Tuberculosis. An enthusiastic discussion followed, resulting in the appointment of a committee to confer with a Civic body from adjoining counties, with the object of establishing a Sanatorium for the segregation and treatment of the victims of tuberculosis. Under the advice and guidance of the energetic League officers, we hope soon to have something definite to report.

Clinical Department

CASE HISTORIES FROM THE CHILDREN'S DEPARTMENT, UNIVERSITY OF CALIFORNIA MEDICAL SCHOOL AND HOSPITALS.

Case No. 3. November 8, 1914. H. F., Male. American, 2 years 9 months.

Complaint: Feverishness. Apathy. Rigidity.

Family History: No familial disease. There are no other children and there have been no miscarriages. A child had meningitis in the home next door in 1913. Hygiene of family probably poor.

Past History: Full term, normal delivery, birth weight 9 pounds. Not breast fed, but given Eagle Brand condensed milk diluted, together with Horlick's malted milk. Development normal.

The child had pertussis in March, 1914. Other than for persistent coryza, the remainder of the past history is negative. The diet has been fairly good and no digestive upsets have occurred.

Present Illness: The child had apparently been in good health until 13 days before entry when there developed a coryza, followed in 3 days by anorexia, and a rapidly developing irritability which progressed in 2 days to stupor of varying intensity. The bowels were constipated and there was apparently fever. The day before entry rigidity of the neck developed and a single convulsion lasting one hour supervened.

Physical Examination: Well developed and nourished child of two and one-half years, somewhat stuporous, showing a slight bilateral internal strabismus, pupils equal and reacting to light, the fundi showed congestion of the vessels and pallor of the nerve heads. There was evidence of a left sided otitis media, mucous discharge from the nose, herpes about the lips, sordes on the teeth, tongue dry and coated, breath foul. There was marked rigidity of the neck, and some opisthotonus. The heart and lungs were normal. The radial pulse was full, equal, of good volume and tension. The abdomen was negative, as were the genitalia. The extremities were well formed and the tissue turgor was good. Reflexes showed absent patellars, biceps and triceps. Abdominals present. No Babinski or Oppenheim determined. Kernig's sign was inconstantly present, Brudzinski not elicited.

The temperature at entry was 38.4° C., pulse 120 and respirations 30.

Blood count—60% Hemoglobin, 32,000 leucocytes, 6,000,000 erythrocytes. Differential: Polys. 80%; lymphocytes, 15%; large monos. 5%; eosinophiles 2½%; basophiles 3%.

The urine was negative.

A lumbar puncture was done immediately and 8 c. c. of very turbid yellowish fluid withdrawn under very low pressure. No clot formed, but a thick sediment collected in the bottom of the tube in a very short time. Examination of the fluid showed 40,000 cells per cu. m m. with 95% polymorphonuclears. Nonne ++; Noguchi ++; no reduction of Fehling's solution. There were great numbers of gram negative intra and extra cellular diplococci. Wassermann and cultures negative on this fluid. 15 c. c. of anti-meningococcus serum administered in the spinal canal.

Treatment consisted in the twelve hourly injection of from 15 to 30 c. c. of antimeningococcus serum intraspinally—a total for 5 days of 150 c. c. The amount of fluid which could be obtained by puncture, however, rapidly diminished, so that frequently only a few drops were secured. Restlessness was extreme, and convulsions were frequent. On the 5th day therefore, a bilateral trephine opening was made in the temporal region. From 40 to 60 c c. of rather turbid fluid under greatly increased pressure and containing myriads of intra and extra cellular organisms were evacuated. The cells were 1,395 per c. m. m. in number and were all of the polymorphonuclear variety. Culture demonstrated the meningococcus. Following operation the child was much quieter, but Cheyne-Stokes respiration supervened and ten hours later death occurred.

No autopsy was permitted.

Diagnosis: Epidemic cerebro-spinal meningitis.

Discussion: This case demonstrates several points of interest particularly in view of the recent advances in the therapy of epidemic cerebro-spinal meningitis as developed during the war. The unquestionable advantage of intravenous therapy has been definitely proven preferably combined with the intraspinal, although in the septicemic variety with few signs and practically clear fluid, the intravenous method alone may be all that is needed. Cases of the type presented were frequently encountered in the army hospitals, both in the United States, and in France, namely, those with blocking, so that small amounts of fluid were all that could be obtained by spinal puncture. It is true that these usually ran a more protracted course and required more serum, but results were nevertheless good in a large percentage of cases by means of the intravenous administration of the serum.

The technic as employed in the army, so thoroughly proven in its efficacy in the southern epidemic, demonstrated its value most thoroughly. This consists in the performing of a diagnostic puncture immediately on entry. If the fluid is cloudy, serum is administered both intraspinally and intravenously—in adults—30-45 c. c. intraspinally and 60 c. c. intravenously. This is repeated for 4 doses, at intervals of 12 hours. The further treatment depends upon the course of the disease—the interval is usually lengthened to a combined injection each 24 hours, being entirely discontinued as soon as possible, since there is a very definite danger of too prolonged injections. The criteria for discontinuance consist in the condition of the spinal fluid, the subjective and objective symptoms and signs, or both.

In the case of clear fluid at the primary puncture, intravenous medication alone is administered and fluid is removed simply for pressure signs. It must not be forgotten to warm the serum to body heat, and to give a de-sensitizing dose of 1 c. c. subcutaneously one hour before administration.

During the war in the English hospitals, grouping of the organism was carried out and the particular serum injected. But while they thus reduced the mortality considerably, they neglected to combine with the intraspinous, the intravenous therapy. This, therefore, offers further possibilities, although time is necessary for the typing of the meningococcus and it is precisely these first few hours—namely, the first 48 hours after the patient comes under observation—that are the most important and require intensive treatment. Frequently enough it was seen that these first 4 doses were sufficient and no more were needed.

The danger of performing lumbar puncture in cases of meningococcus septicemia in actually causing an infection of the meninges by an as yet

unproven pathway (filtration, trauma, or contamination of the spinal blood vessels) has been recently raised. It is true that a spinal fluid at first clear, later frequently becomes turbid during the course of the disease. The question of infection of the meninges has not been absolutely proven as yet and hardly justifies the use of the intravenous route to the exclusion of the intraspinous.

GLEANINGS FROM A YEAR OF COUNTRY PRACTICE.

By WILLIAM B. SMITH, M. D., Kernville, Calif.

That there may be no doubt that the title is correct, let me say that my territory covers a stretch of mountain country and valleys, sixty miles east to the desert, forty miles south to the railroad, thirty miles west to the edge of the San Joaquin foothills, and thirty miles north into the high Sierras. In all this area there is a census population of over one thousand souls, ranchers, miners, trappers, and Power Company employees. The health of the community is rather oppressive to an ambitious young medico, but to tide over the slack times, many of my families pay two dollars per month "dead or alive," and get the benefit of a 25 cent mileage rate instead of the $1.00 rate paid by those of less foresight. And let me say that my experience teaches me that any man starting without financial or professional backing will save years of debt, discouragement, and health-destroying worry, if he will be content to look for just such a country location where he will find need of his services, instant appreciation, and a sure living for himself and family.

And let the high lights of my past year go to show that he will not have wasted his time nor his training either. So listen to my gleanings:

Dec. 1918 to Jan. 15, 1919. Influenza epidemic of 85 cases, twenty-five whites with one pneumonia and death; 60 Indian with five pneumonias and five deaths. I stepped into one Indian shack without a mask and found sixteen cases bunked around on the floor of the same room, all coughing and spitting on the floor. I stepped out and put on a good thick gauze mask and then waded into them. Only one of this disgusting bunch had sense enough to die. Not a single Indian survived who had Pneumonia following his Influenza. There has been no recurrence among them this Winter of 1919-20.

Jan. 15 to Feb. 8. Nothing stirring, health of community disgustingly good. Few office calls. Bought a 160 acre ranch to fill in spare time. Hired rough neck to do the heavy graft.

Feb. 9. Call to ancient abandoned county seat to ease the itch of a case of chronic eczema. History of "stroke" at age of forty, followed by left-sided paralysis and development of "fish scale skin"—how I wished I could have transported him back ten years and into Old Daddy Hyde's skin clinic for a classical dissertation of the differential diagnosis—chronic scaling eczema, ichthyosis, tretiary syphilides, and fading off with summaries on psoriasis, lichen planus, and pityriasis. From then on I eased the old fellow's days by liberal orders of "hop"—and if the dying blessing of such an old scalawag is of any value—I have it!

Feb. 21. Primipara—8-pound boy, complete breech. Had husband put her to sleep, did a version maneuver, brought down the feet and did an extraction. All O K and every one happy!

Feb. 22 to March 21. Nothing much doing. Got into overalls mostly and helped "Rough Neck" put in winter grain. Calloused hands—but developed enormous appetite.

March 22. Another primipara, this time with contracted and deformed pelvis. Had choice of high forceps, or version and extraction. Chose the latter, but had difficulty, lost time, shut off the cord in the process of version, got a dead baby. Advised this girl to have one more baby and have it by Caesarian and get herself sterilized at the same time. Six months later she came in again pregnant—in poor health—I gave her a lecture that withered her eyebrows, then aborted her.

March 23. Mexican breed came in for cough medicine for six months' old baby. Later he called me when I was out—when I got back found the baby dead,—gastro-enteritis. I unwisely salvaged my cough medicine, which had not been paid for. Later the "breed" spread the story about that I killed his baby with the wrong medicine, which was so hot that a drop spilled on the floor burned a hole in the wood. Three months later I had my come-back when the "breed" had a runaway and smashed up himself and whole family. Before I would touch any of them I made him eat the former malignant story. He has been a "good Indian" ever since.

To April 15. Mostly farming, but to vary things a little, took out a Slaughtering License, and started the "Rough Neck" into butchering cattle for meat for the district. Quite some success at it too.

April 15. Primipara, big husky country girl, but eighteen hours of hard labor did not start things. Found a flat pelvis with the head jamming forward against the Os Pubis—no progress—did a high forceps—everything O K.

May 4. Big fat multipara in labor thirty-six hours with pains averaging thirty minutes apart. No reason for interference—finally one pain brought the head down on the perineum, and the next pain produced the baby. Three days' time—three ten mile trips—and they howled their heads off at a $60.00 bill—but paid it!

May 30. Primipara—three months pregnant—hyperemesis gravidarium—intractable—called consultant from Los Angeles—who advised medical treatment—apparently good results for some days—then coma—aborted with apparent relief—lower lobe congestion—death.

To July 12. Professionally quiet—agriculturally busy, mostly in overalls in the hay field.

July 13. Power Company case of man squeezed between truck and water trough—sick to his stomach a few minutes—then drove on to camp—felt somewhat ill. I took him to the hospital where